Elk Creek FMU

The Elk Creek FMU is 60,768 acres. The majority of lands within the FMU include a portion of the Marble Mountain wilderness. This FMU is entirely within the Klamath National Forest DPA. The WUI community at risk occurs primarily along the lower reaches of Elk Creek from Happy Camp to the East Fork of Elk Creek.

Fire Protection Responsibility	Acres	Percent of FMU
Klamath National Forest	60,768	100%
Wildland Urban Interface	**Acres**	**Percent of FMU**
Community At Risk	241	<1%
Defense Zone	1,474	2%
Threat Zone	2,356	4%

Management Area	Acres	Percent of FMU
Wilderness	23,630	39%
Wild River	318	1%
LSR	8,248	14%
Riparian Reserves	7,709	13%
Recreational River	1,769	3%
Retention	412	1%
Partial Retention	14,760	24%
General Forest	3,372	6%
No Data	2	<1%
Private (may include BLM)	548	1%

Wilderness

A portion of the Marble Mountain Wilderness is located in the southwest corner of the FMU.

Description

Wilderness areas are mostly pristine landscapes, managed as vestiges of a wild America. Wilderness resources provide specific values such as solitude, physical and mental challenges, and opportunities for scientific study and primitive recreation.

Management Goals

Manage for wilderness characteristics, natural conditions, and ecological processes within each wilderness.

Provide recreationists a primitive and semi-primitive, non-motorized recreation opportunity.

Manage for high air quality.

Utilize forage resources consistent with the 1964 Wilderness Act, as amended.

Desired Future Condition

Each wilderness looks natural, with human disturbances substantially unnoticeable. Ecological processes, including fire, have shaped the vegetative patterns and condition. Some evidence of human influence consistent with the Wilderness Act may be present due to valid mining claims, livestock grazing, and recreational use.

Standards and Guidelines

MA2-1 To better emphasize wilderness values, manage each wilderness as an integrated resource with inseparable ecosystem parts.

MA2-2 Minimize the use of motorized equipment and mechanical transport of materials and personnel within wilderness. Carefully analyze the need for motorized equipment and obtain prior documented approval. Schedule such work to avoid disturbance to the public.

MA2-3 Wilderness values shall predominate if resource conflicts are identified.

MA2-7 Naturally occurring ecological processes should predominate within wilderness ecosystems.

MA2-16 Manage smoke from prescribed natural fires (PNF) as a component of the wilderness. Manage prescribed natural fires and prescribed burns (ignited by humans) to reduce future smoke emissions. Coordinate with the proper State and local agencies to meet air quality regulations (see Forest-wide Standards and Guidelines for Air Quality, Fire Management).

MA2-55 All lightning-started fires will be PNF; unless the fire does not meet the goals and objectives (it then will be declared a wildfire). Permit lightning-caused fires to play their ecological role, as nearly as possible, within the wilderness.

MA2-56 Each PNF will have a PNF Burn Plan prepared within 48 hours of discovery. Review the Burn Plan daily to assure validity based on current and projected conditions.

MA2-57 Coordinate fire management actions with forests that share management of the wildernesses.

MA2-58 A Wilderness Fire Coordinator (WFC) may be established to gather and send out information and aid to the National Forests and Region. The WFC will set priorities for on-going fires within the wilderness areas. The WFC should be at least Nationally qualified as a Prescribed Fire Manager. As a minimum, the WFC should have 1 Fire Information Officer and a Wilderness Resource Advisor.

MA2-59 Consider all person-caused wildland fires (not management lighted prescribed fires) as wildland fires and use the appropriate suppression response.

MA2-60 Reduce to an acceptable level the risks and consequences of a wildland fire within or escaping from the wilderness. Assessments of consequences will emphasize potential impacts on residential intermixes, mixed or adjacent landowners, Endangered or Threatened species, etc.

MA2-61 Permit planned ignitions or management-lighted prescribed fire. This will allow fire to return in a more natural role so managers can select meteorological and fuel situations for future prescribed natural fire. Wilderness fire policy permits the use of management-lighted fires.

MA2-62 Suppression of wildland fire will use appropriate suppression response and the Minimum Impact Suppression Techniques as outlined in the Forest-wide Fire and Fuels Management Standards and Guidelines.

MA2-63 Fire prevention will be an important practice within wilderness. Fire prevention activities, such as signing, will concentrate on entrance portals to not diminish the visitor's wilderness experience. Visitor contacts within the wilderness will occur when there is a threat to wilderness preservation or resource protection.

MA2-64 Develop a PNF implementation schedule. For all the resources, develop the decision flow charts and prescription parameters that meet the resource standards and guidelines.

Emergency use of motorized equipment and mechanical transport within the wilderness must be consistent with the delegated authority and approval process outlined by the Forest Supervisor in the letter dated June 2, 2009 (2320/5130). It is also expected that a Wilderness Resource Advisor (WRA) will be assigned to every wilderness fire.

When emergency use of motorized equipment is granted, the authorization must be documented using the **Emergency Wilderness Mechanized Transport/Motorized Equipment Use Authorization** form.

BAER is only allowed in wilderness if (1) necessary to prevent an unnatural loss of the wilderness resource or (2) to protect life, property, and other resource values outside of wilderness. Normally use hand tools and equipment to install selected land and channel treatments (FSM 2323.43b)

Wild Rivers

The Outstandingly Remarkable Values within the wild segment include Fisheries, geology, scenery, vegetation and water quality.

Description

This prescription applies to those Wild River segments of either designated components of the National Wild and Scenic River (WSR) System, or rivers recommended within this Plan, for inclusion in the National System.

The Wild classification applies to those rivers that are free flowing, free of impoundments and generally inaccessible except by trail. The terrain surrounding the rivers is variable, but generally very steep and rocky. The canyons are often incised so sharply that views from the rivers themselves are limited.

The corridor boundary for the recommended rivers will be maintained at approximately 1/4-mile on each side of the river until Congress has reviewed the proposed designations or a management plan can be prepared. For designated rivers, the newly established boundaries described and mapped in this Forest Plan.

This prescription applies to those Wild River segments or recommended Wild River segments of Burney Valley Creek, Clear Creek, Elk Creek, Granite Creek, Grider Creek, Kelsey Creek, the North Fork of the Salmon River, South Russian Creek, Rainy Valley Creek, the South Fork of the Salmon River, Tenmile Creek, Toms Valley Creek, Ukonom Creek, West Fork of Clear Creek and Wooley Creek.

Currently, the only designated components of the WSR System on the Forest are portions of the North Fork of the Salmon River and Wooley Creek. The other rivers and creeks have been recommended for inclusion in the National System.

Although the rivers are all classified as Wild, the character of each river may be significantly different. The outstandingly remarkable values for each river are different. Therefore, the management objectives for each river may be different as well. The specific management objectives for each river will be documented in a River Management Plan. For designated rivers, the river management boundaries will be delineated by the approval of the Forest Plan. For rivers recommended for designation in the Forest Plan, the river boundaries should be identified within 3 years of designation by Congress.

Desired Future Condition

The river area appears essentially primitive, with little or no evidence of human activity. Viewers see fire scars from the rivers, evidence of the ecological processes that shape the vegetative patterns viewed from the river. The physical and biological integrity of the aquatic system is maintained. Habitat for anadromous and resident fish species is in good condition, capable of supporting viable populations of indigenous species. Shorelines and watersheds that can be seen from the rivers are essentially free of structures. These include buildings, pipelines, powerlines, pumps, generators, dams, diversion works, riprap, and other modifications of the waterway or adjacent land within the river corridor. These rivers represent vestiges of primitive America.

Standards and Guidelines

MA3-23 Protect outstandingly remarkable values. The use of mechanical equipment should be discouraged. *(Updated to reflect that a River Management Plan is now not required)*

TES Species Habitat

The TES Species habitat consists of a portion of the Seiad and Ten Bear LSRs, and six Activity Centers located outside the LSR network.

Description

Each of the T&E species requires different habitat. When the habitat of these species overlap, the management priority shall be placed on the species with the most specialized habitat needs (that is, the rarest occurring habitat).

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Management Goals

Provide habitat conditions and management activities that contribute to the recovery of Federally listed T&E species and to Sensitive species found on the Forest. Emphasize the recovery of each species, by managing for quality habitat, consistent with ecological processes.

Provide for more than the minimum number of bald eagle and peregrine falcon pairs established by the Recovery Plans and disaggregated to the Forest.

Late Successional Reserves

Late-Successional Reserves are designed to provide for the viability needs of all late-successional species in an ecosystem approach. Meet the habitat requirements as outlined in the *Record of Decision (ROD) for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* signed April 13, 1994 and the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* dated February 1994 (FSEIS).

Description

LSRs have been designated based on 5 elements: (1) areas mapped as part of an interacting reserve system; (2) Late-successional/Old Growth 1 and 2 areas within Marbled Murrelet Zone 1 and certain owl additions, mapped by the Scientific Panel on Late-Successional Forest Ecosystems (1991); (3) sites occupied by marbled murrelets; (4) known owl activity centers; and (5) Protection Buffers for specific endemic species identified by the Scientific Analysis Team (1993). Additional areas may be included as species are identified as provided for in the survey and management standards and guidelines.

Management Goals

The objective of LSRs is to protect and enhance conditions of late-successional and “old growth” forest ecosystems, which serve as habitat for late-successional and "old growth"-related species including the northern spotted owl. These reserves are designed to maintain a functional, interacting, late-successional and "old growth" forest ecosystem.

Desired Future Condition

The characteristics of individual areas vary according to the dominant vegetative species, site class, topography and other site factors. Well-dispersed and continuous areas of multi-layered forests with high quality habitat characteristics and attributes are common: (1) under optimum conditions on north slopes, (2) at high elevations, and (3) in cool, moist areas. The overstory trees are large diameter, tall and have obvious signs of decadence. Some are broken-topped, have mistletoe, or have platforms of branches capable of holding organic materials that serve as a nest. Snags are common and fallen trees visible on the ground, providing for adequate prey populations. Within true fir habitats or where hardwoods occur, mid-seral stage forested areas provide suitable habitat as well. Although overstory trees are smaller and stands are less dense, important structural elements, such as snags and nesting platforms, are present. South slopes and drier areas are more open due to frequent natural fires.

Exceptions

RNAs and activities required by recovery plans for listed T&E species take precedence over LSR standards and guidelines.

Management Assessment for Late-Successional Reserves

Management assessments have been completed for LSRs and 100-acre LSRs throughout the Forest. These LSR assessments include: (1) a history and inventory of overall vegetative conditions within the reserve, (2) a list of identified late-successional associated species known to exist within the LSR and information on their locations, (3) a history and description of current land uses within the reserve, (4) a fire management plan, (5) criteria for developing appropriate treatments, (6) identification of specific areas that could be treated under those criteria, (7) a proposed implementation schedule tiered to higher order (for example, larger scale) plans, and (8) proposed monitoring and evaluation components to help evaluate if future activities are carried out as intended and achieve desired results. The Regional Ecosystem Office (REO) has reviewed these LSR assessments. Activities that have been reviewed by the REO have been prioritized for each LSR. LSRs have also been prioritized by activity needs. Refer to the Forest-wide LSR assessment, Taylor, Dillon, Crapo/Little North Fork, and Goosenest LSR assessments. Also, refer to Appendix K, LSR Fire Management Plan, located at the end of this document.

Standards and Guidelines

MA5-35 Each LSR will be included in fire management planning as part of watershed analysis. Fire suppression in LSRs will utilize minimum impact suppression methods in accordance with guidelines for reducing risks of large-scale disturbances. Plans for wildfire suppression will emphasize maintaining late-successional habitat. During actual fire suppression activities, fire managers will consult with resource specialists (for example, botanists, fisheries and wildlife biologists, hydrologists) familiar with the area, these standards and guidelines and their objectives, to assure that habitat damage is minimized. Until a fire management plan is completed for LSRs, suppress wildfire to avoid loss of habitat in order to maintain future management options.

MA5-36 In LSRs, a specific fire management plan will be prepared prior to any habitat manipulation activities. This plan, prepared during watershed analysis or as an element of province-level planning or a LSR assessment, should specify how hazard reduction and other prescribed fire applications will meet the objectives of the LSR. Until the plan is approved, proposed activities will be subject to review by REO. REO may develop additional guidelines that would exempt some activities from review. In all LSRs, watershed analysis will provide information to determine the amount of CWD to be retained when applying prescribed fire.

MA5-37 In LSRs, the goal of wildfire suppression is to limit the size of all fires. When watershed analysis, province-level planning, or a LSR assessment is completed, some natural fires may be allowed to burn under prescribed conditions. Rapidly extinguishing smoldering CWD and duff should be considered to preserve these ecosystem elements.

MA5-38 Utilize an aggressive prescribed fire program to maintain long-term habitat quality and ecological processes within LSRs once LSR assessments and National Environmental Protection Act (NEPA) analysis are completed and site-specific decisions are made. Specific fire prescriptions shall be used until PNF can be effectively used. The use of PNF is outlined in the Wilderness Fire Management S&Gs. Those S&Gs also shall apply to LSRs.

MA5-39 Report wildfires within activity centers to the appropriate District and/or Forest biologist. The biologist shall determine the need to contact the USFWS. Report fires that escape initial attack to the USFWS. Motorized and heavy equipment may be permitted by the Incident Commander to assure habitat protection.

MA5-40 Wildfire prevention should be critical to habitat maintenance. During critical fire danger periods, increased prevention efforts should be undertaken, especially in high use recreation areas within LSRs and in areas adjacent to populated areas.

Retention VQO

Description

These areas are scattered throughout the Forest. They typically are found: (1) in the foreground of high visual sensitivity roads, trails, etc., (2) in the foreground or middle ground of areas with Variety Class A scenery or (3) areas seen from local communities (USDA Agriculture Handbook #462, National Forest Landscape Management, Vol. 2, Chapter 1). These roads and trails typically receive high levels of public use, or access recreation sites or areas with visually pleasing scenery.

Management Goals

Provide a level of attractive, forested scenery by maintaining the areas in a natural or natural-appearing condition. Manage human activities so they are subordinate to the characteristic landscape. Also, manage human activities so they are not evident to the casual Forest visitor.

Manage for a programmed, sustained harvest of wood products in areas that are capable, available, and suitable for timber management.

Maintain stand health, as well as resilience to wildland fire, insect, disease, and other damage.

Desired Future Condition

The signs of management activities are not apparent. Views from visually important roads and trails appear forested and provide a natural or natural-appearing forest.

Vegetative or ground-disturbing management activities that have been implemented repeat form, line, color, and texture that represent characteristics of the landscape. Changes in their qualities of size, amount, intensity, direction, pattern, etc. are not evident to the average Forest visitor.

Standards and Guidelines

MA11-14 Use prescribed fire to reduce natural fuel buildups, to treat post-harvest fuels and to influence vegetative development or composition when there is no market for the slash or down wood.

MA11-15 Design fuelbreaks to mimic the natural characteristics of the area. On steep ground, design units that are operationally feasible and effective to treat fuels.

Recreational Rivers

The Outstandingly Remarkable Values for the recreational segment include fisheries, geology, wildlife and cultural values.

Description

This prescription applies to those Recreational River segments of either designated components of the National WSRs System or rivers being recommended for possible inclusion in the National System.

The Recreational classification applies to those rivers or sections of rivers that: (1) are free-flowing, (2) are readily accessible by road or railroad, (3) may have some development along the shorelines and (4) may have undergone some impoundment or diversion in the past.

For a complete listing, in the Forest Plan, refer to Table 4-25, Acres Allocated to Designated and Recommended Recreational Rivers (page 4-155).

Management Goals

Preserve the Recreational Rivers in a free-flowing condition. Protect the rivers and their immediate environments for the benefit and enjoyment of present and future generations.

Protect and enhance the outstandingly remarkable value(s) for which the river(s) are or would be designated, while providing for public recreation and resource uses that do not adversely impact or degrade those values.

Desired Future Condition

The waterway remains generally natural and riverine in appearance. The physical and biological integrity of the aquatic system is maintained. Habitat for anadromous and resident fish species is in good condition, capable of supporting viable populations of indigenous species. The river area may be developed for the full range of agricultural and forestry practices show evidence of past and ongoing timber harvest or include some residential, commercial, or similar development.

Standards and Guidelines

MA13-17 Fire management strategies should normally follow those of the surrounding area. Recognize and incorporate the Recreational river values into the fire suppression tactics. Prescribed fire may be used within the management area to maintain the ecological functions, if it maintains the outstandingly remarkable values for which the river was designated.

Partial Retention VQO

Description

This prescription applies to those areas identified with a Partial Retention VQO. It encompasses 188,500 acres. These areas typically are either in the foreground of moderate visual sensitivity roads, trails, etc., or the middleground of high sensitivity roads.

Scattered throughout the Forest, these areas are primarily in the middle distances (1/2 to 3 miles) from selected roads and trails.

Management Goal

Provide an attractive, forested landscape where management activities remain visually subordinate to the character of the landscape. Manage human activities so they are subordinate to the character of the landscape.

Maintain stand health as well as resilience to wildland fire, insect, disease, and other damage.

Desired Future Condition

Areas managed to meet a Partial Retention VQO may show evidence of management activities but are visually subordinate to the characteristic landscape in form, line, color, or texture of landscape elements. Views from visually important roads and trails appear forested and provide a nearly natural looking landscape.

Lands capable of growing coniferous vegetation are forested.

Standards and Guidelines

MA15-15 Use prescribed fire to reduce natural fuel buildups, to treat post harvest fuels and to influence vegetative development or composition when there is no market for the slash or down wood.

MA15-16 Design fuelbreaks to mimic the natural characteristics of the area. On steep ground, design units that are operationally feasible and effective to treat fuels.

General Forest

Description

Scattered throughout the Forest, these areas make up about 11% (262,000 acres) of the Forest land base. They are lands that are capable, available, and suitable to be managed for a host of resource conditions, including structural component and commercial outputs. They currently support a variety of vegetation including shrubs, hardwood species, and various tree species in varying sizes and densities. They are areas where timber outputs, consistent with Forest-wide management goals, are of a high priority.

Management Goals

Provide a programmed, non-declining flow of timber products, sustainable through time. These levels may vary from year to year, based on ecological processes. Maintain conifer stocking levels and high growth rates commensurate with the capability of the site to produce wood fiber. Intensively manage young regenerated stands to maximize growth potential.

Maintain stand health, as well as resilience to wildland fire, insect, disease, and other damage. Emphasize salvage and restoration from catastrophic events. Reforest capable, but currently non-stocked, lands.

Emulate ecological processes and stand and landscape patterns where possible. Within harvest units, maintain appropriate structure, composition, and ecological functioning of the area.

Provide for snags and hardwood habitat to help maintain viable populations of wildlife species that require these structural components.

Meet the VQOs. Achieve less modified visual conditions when possible.

Develop a transportation system to transport Forest commodities efficiently to available markets.

Where possible, adjust planting levels to reduce pre-commercial thinning and fuel hazard costs in the future.

Desired Future Condition

The mosaic of healthy forest stands is comprised of a variety of vegetative species. The composition of individual stands varies considerably depending on forest type and seral stage development. Although openings with hardwoods, shrubs, grasses, and forbs are apparent, forest stands consist primarily of conifers. In some areas, the conifer component of the vegetation is sparse (due to vegetative manipulations or natural conditions). All areas maintain some structural components of older stands. Some areas support mature forest stands. The oldest stands are between 80 and 120 years old. Generally, this portion of the forest has younger trees than the surrounding areas. Stand sizes vary with topography and the landscape pattern of surrounding areas.

Regeneration openings have clumps of green trees on at least 15% of the area. Existing seed tree and shelterwood stands retain their residual trees (3 to 12 trees/acre) for structural diversity.

Stocking control maintains healthy, vigorously growing stands.

Reforestation, timber harvesting, and stand tending activities are commonplace. A network of roads provides access throughout these areas.

Habitat for species, which use early and mid-seral stages, is abundant.

Standards and Guidelines

MA17-15 Use prescribed fire to reduce natural fuel buildups, to treat post harvest fuels and to influence vegetative development or composition when there is no market for the slash or down wood.

MA17-16 Design fuelbreaks to mimic the natural characteristics of the area. On steep ground, design units that are operationally feasible and effective to treat fuels.

3.2.3 FMU Characteristics

Elk Creek water shed extends from Happy Camp to the Marble Mountain Wilderness and From Frying Pan ridge to Titus Ridge. A few residences are located in the northern portion of the FMU along Elk Creek.

3.2.3.1 Safety

ROADS: The main access to this FMU is on the county road 7C001 that turns into road16N01. This is used both by local household, recreation users accessing trailheads into the Marble Mountain wilderness and local access for hunting and woodcutting.

Other hazards: Elk Creek Trail and Norcross Trailhead have almost 100% mortality along certain stretches with large snags adjacent to the creek and trails.

The Humboldt and Mount Diablo Meridian runs through this FMU. When using legal description it is important to identify appropriate Township and Range on map.

3.2.3.2 Physical

The northern most point of this FMU is where Elk Creek flows into the Klamath River. Titus Ridge forms the western boundary. Titus Peak is a prominent peak on the western boundary. Frying Pan Ridge and the Marble Rim form the eastern boundary. Prominent peaks include Huckleberry Mountain; Buckhorn Mountain; Kings Castle and Black Marble Mountain. Prominent features on the southern boundary include Marble Mountain, Elk Peak and Pigeon Roost.

This FMU has a north/south alignment, with numerous side drainages. The northern portion of has road access, but some roads have sustained damage as a result of high severity fire effects followed by periods of heavy precipitation

Roughly 40% of this FMU has relatively gentle topography, with slopes of 45% or less. The gentler slopes tend to occur in the higher elevation drainages in the southern portion of the FMU, with the exception being a large dormant landslide feature located northwest portion of the FMU between Twin Creek and Malone Creek.

Slope Class	Acres	Percent of Area
<30%	9,576	16%
30-45%	13,767	22%
45-60%	20,041	33%
60-90%	16,856	28%
>90%	563	1%

The elevation ranges from roughly 1000 feet to just over 7400 feet at Kings Castle. Elevation ranges are classified consistent with the major ecological zones in the Klamath Mountain Bioregion (Sugihara et al 2006). Generally the area <2000 feet occurs in the northern portion of the FMU in the East Fork of Elk Creek and the lower portion of the main stem of Elk Creek . The majority of the FMU is between 2000 and 4200 feet. Almost the entire FMU from Bishop and Doolittle Creeks to the north is less than 4200 feet, although the eastern boundary is above 4200 feet. The southern portion of the FMU has more

area above 4200 feet. The ridges in the south end of the FMU reach elevations above 6000 feet from Huckleberry Mountain on the east to Johnsons Hunting Ground on the west

Elevation Zone	Acres	Percent of Area
Lower Montane (<2000 ft)	4,327	7%
Mid–Upper Montane (2000-4250 ft)	30,283	50%
Upper Montane to Subalpine (4250-6000 ft)	18,896	31%
Subalpine(>6000 ft)	7,308	12%

Inversions generally set in at around the 4200 foot level. When this occurs smoke will settle into the drainages below 4200, impacting both availability of aviation resources and local air quality in the surrounding communities.

3.2.3.3 Biological

Vegetation is grouped by Wildlife Habitat Relationship (WHR) Vegetation Type. Conifers are the dominant life form within the FMU. In 2008 the Panther fire burned over 10,000 acres in one burn period. The vegetation mapping was completed before 2008 and does not reflect the large high severity patches created by the crown fire activity. Much of the Burney Valley Creek, Stanza Creek and Buckhorn Creek burned at high severities.

The table below displaces the vegetation distribution before the fire. Much of the area that burned was typed as Sierra Mixed Conifer WHR type.

WHR Life Form	Acres	Percent of Area
Non-vegetated & Herbaceous	2,549	4%
Shrub Vegetation Types	6,409	11%
Hardwood Dominated	10,459	17%
Small Conifers (<11” dbh)	5,715	9%
Large Conifers (>11” dbh)	34,443	58%

The plantations are located in the northern portion of the FMU and most were not affected by the Panther fire run. The exception is the area in Stanza drainage which was planted after the 2001 Stanza fire and reburned in 2008.

Plantation Age	Acres	Percent of Area
>40 Years	133	<1%
20 – 40 Years	3 ,789	6%
<20 Years	1 ,242	2%

Anadromous Fisheries

There are four anadromous species, as well as resident trout species in this FMU. The anadromous fish species habitat is primarily limited to Elk Creek and a very short distance up the East Fork of Elk Creek. Fall Chinook habitat extends to the confluence of Doolittle Creek. Coho Salmon habitat extends to

Stanza Creek. Summer steelhead habitat extends to the confluence of Burney Valley and Toms Valley Creeks. Summer steelhead habitat also extends up the lower reaches of the East Fork Elk Creek and short distances up Doolittle and Buckhorn Creeks. Winter steelhead occupy the same habitat as summer steelhead.

Fish Species	Species Status	Miles of Habitat
Coho Salmon	ESA listed as Threatened	13.2
Fall Chinook	FS designated Sensitive	9.9
Spring Chinook	FS designated Sensitive	0
Summer Steelhead	FS designated Sensitive	21.8
Winter Steelhead	FS designated Sensitive	22.1
Resident Trout	Unlisted	44.6

Here is where we should include reference to established drafting sites and appropriate language for minimizing impacts to anadromous fish species (i.e., use of fish screens)

Wildlife

Portions of the Seiad and Ten Bear LSR extend into this FMU. There are two Goshawk Management Areas in this FMU. One is located in the East Fork Elk Creek (T15N; R8E: NW ¼ Sec 9 and SW ¼ Sec 4). The other is located along the lower reaches of Lick Creek (T15N; R8E; NW ¼ Sec 32).

3.2.3.4 Resources

There are scattered private holdings along Elk Creek from Curly Jack Road to near Norcross trailhead. The Happy Camp Community Services District has its water inlet on lower Elk Creek including large holding tanks near Curly Jack Road. There are scattered homestead sites along Elk Creek that have historic value. **The Happy Camp FSC Point of contact is George Harper (530) 496-2990**

Campgrounds	Trailheads	Concenrated Use Areas	Protection Points
Norcross	Sulphur Springs	Granite Creek Trail Bridge	Granite Creek Trail Bridge
	Norcross	Chimney Camp	
	Bear Lake	Cougar Creek	Elk Creek Bridge
	Johnsons Hunting Ground	Wilderness Gardens	Marble Rim
		East Fork Camps	
		Hunters Camps	

3.2.4 FMU Fire Environment

A total of 333 fires have occurred over the period of record (1911 – 2009). The majority of fires have been caused by lightning (78%). Roughly 38% of the FMU has not burned during the period of record. Most fires are suppressed at less than 10 acres. A total of 57 fires have a mapped perimeter (17% of all ignitions). These fires burned a total of 60,165 acres, with 7,403 acres having at least two fires occurring over the period of record. The average fire size is 1033

acres. The largest fire (King Titus) occurred in 1987. The King Titus fire has been identified as the largest fire of record in three of the Happy Camp FMUs. This fire was contained at 60,165 acres and burned 14,973 acres within this FMU.

There are several recent large fires of record within this FMU (2001-2008) with the largest being the Panther fire in 2008. This fire made a significant single burning period run as the drainage.

Opportunities to confine wildfires using recent wildfires and natural barriers can be found along the southern half of the FMU from Buckhorn Mountain on the east boundary to Johnsons Hunting Ground on the west boundary.

In the northern portion of the FMU, there are few natural barriers, but recent wildfire perimeters may provide opportunities for confinement strategies. Dozer lines from the 2007-2008 fires are accessible from Titus ridge into the Elk Creek drainage.

3.2.4.1 Fire Behavior

This FMU is dominated by timbered fuel types. Timber litter models (184-189) make up the majority of the fuel type in this FMU. These are moderate to high load timber litter models with higher rates of spread and flame length for this fuel group.

Shrub fuel models constitute the next highest percent of area. Roughly half of the shrub fuel types are represented by low to moderate load fuel models (141 and 142) with low flame lengths and rates of spread. This fuel model represents much of the areas burned in recent wildfires. Fuel model 145 represents much of the remaining fuels within this group. This fuel model has a fuel depth of 4-6 feet, with a very high rate of spread and flame length and high moisture of extinction. This fuel model represents both shrub dominated vegetation types as well as young conifer stands.

This FMU has a higher proportion of grass and shrub dominated fuel models than most Westside FMUs due to the amount of recent fire activity (total 36%).

Fuel Model Group	Average Size	Largest Polygon	Total Acres	Percent of Area
Unburnable	1.4	61	487	1%
Grass	5.2	266	2,904	5%
Grass/Shrub	5.3	1352	5,034	8%
Shrub	3.4	234	14,059	23%
Timber Litter low ROS/FL	3.9	293	6,498	11%
Timber litter high ROS/FL	6.5	940	18,465	30%
Timber US low ROS/FL	9.6	1239	7,367	12%
Timber US high ROS/FL	5.4	465	5,589	9%
Slash/Blowdown	4.7	61	399	1%

3.24.2 Weather

This FMU is in Fire Weather Zone CAZ280 and NFDRS Zone 200. This FMU is in the Northwest Mountains Predictive Service Area (NC04)

Inversions generally set in at around the 4200 foot level. When this occurs smoke will settle into the drainages below 4200, impacting both availability of aviation resources and local air quality in the surrounding communities.

Slater Butte is the closest RAWS location. It is a ridge top RAWS adjacent to the Slater Butte Lookout at an elevation of 4670 feet. It is approximately 5 miles north of the FMU northern boundary. This RAWS is strongly influenced by east winds that are channeled and accelerated down the Klamath River canyon. The RAWS sits on top of the inversion and East winds hit this RAWS site strongly (reference John Snook ONCC RAWS remarks 2008). The Blue Ridge RAWS (5880 feet) is located roughly 17 miles south of the southern boundary. Although this RAWS is not as close, it is more representative of ridge winds that can be expected in the higher elevations of this FMU.

The north south drainage was in alignment with prefrontal winds. Sustained wind speeds at the Blue Ridge RAWS ranged from 8 to 32 mph (hourly 10 minute sustained averages) and averaged 17.7 mph for the 24 hour period on the date the run occurred. Maximum gusts were recorded between 40 and 48 mph for six consecutive hours during the same period.